

## REMARKS

Claims 1-40 are pending in the application. Claims 1-40 stand rejected under 35 U.S.C. § 101 for being directed towards non-statutory subject matter. Claim 27 is objected to for a missing ‘;’. Claims 29-36 stand rejected under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement. Claims 29-36 stand rejected under 35 U.S.C. § 112, second paragraph for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 1-14, 16-23, 25-27, 29-36, and 38-40 stand rejected under 35 U.S.C. § 102(e) as being anticipated by United States Publication No. 20030229707 to Sharon *et al.* (hereinafter “Sharon”). Claims 15, 24, 28, and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sharon as applied to claims 13, 18, and 29, and further in view of United States Patent No. 6839825 to Brown (hereinafter “Brown”).

Claim 27 has been amended in accordance with the Examiner’s correction requirement.

## REJECTIONS

### Claims Rejections under 35 U.S.C. § 101

Claims 1-40 are rejected under 35 U.S.C. § 101 for claiming non-statutory subject matter. Applicants disagree and respectfully submit that the Office Action fails to establish a *prima facie* case. Office personnel have the burden to establish a *prima facie* case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. *See MPEP § 2106 (II)(A).*

Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101. Compare *Musgrave*, 431 F.2d at 893, 167 USPQ at

289; *In re Foster*, 438 F.2d 1011, 1013, 169 USPQ 99, 101 (CCPA 1971). Further, when such a rejection is made, Office personnel must expressly state how the language of the claims has been interpreted to support the rejection. *See* MPEP § 2106 (II)(A). Applicants submit that the Office Action fails to expressly state how the language of the claims has been interpreted to support the rejection.

The applicant is in the best position to explain why an invention is believed useful. Office personnel should therefore focus their efforts on pointing out statements made in the specification that identify all practical applications for the invention. Office personnel should rely on such statements throughout the examination when assessing the invention for compliance with all statutory criteria. An applicant may assert more than one practical application, **but only one is necessary to satisfy the utility requirement**. Office personnel should review the entire disclosure to determine the features necessary to accomplish at least one asserted practical application. *See* MPEP § 2106 (II)(A) (emphasis added).

Applicants submit that the specification does indeed reasonably convey at least one practical application. Amended Claim 1 recites, in pertinent part (emphasis added):

A self-descriptive binary data structure **stored on a computer readable storage medium** for communicating binary data between a **source device and a target device**, the data structure comprising:

*See* Claim 1. The specification states that the source and the target include CPU's, electronic memory modules, communication interfaces, and various modules. Certainly CPU's and electronic memory modules, which store data and metadata, are concrete and tangible devices. The source may be configured to send data to the target and likewise the target is configured to receive the data. *See*

specification, paragraph 0051. The transmission of data is a measurable process and therefore very concrete and tangible.

The Office Action states “...the claims do not specify that the result...neither displayed nor outputted to a user or otherwise used in the real world.” Applicants disagree, the specification reasonably conveys that the data structure may perform an upgrade on the target device . *See* paragraph 0052 (stating that the data structure may comprise a microcode reconstruct and boot image, or in other terms a data structure configured to upgrade the microcode of the target). The transmission of such a data structure results in a “useful, concrete and tangible result.” This is at least one example of a real world result and therefore independent Claim 1 is in accordance with 35 U.S.C. § 101.

Furthermore, the fact that the data structure can be stored on a disk may satisfy the utility of the requirement of 35 U.S.C. § 101. As quoted by the Office Action, “[f]or example, a claim directed to a word processing **file stored on a disk may satisfy the utility** requirement of 35 U.S.C. § 101 since the information stored may have some **“real world”** value.” *See* Office Action page 3. This together with real world application of the claimed invention is sufficient to establish accordance with 35 U.S.C. § 101.

Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing a functional change in the computer. *See* Warmerdam, 33F.3d at 1361, 31 USPQ2d at 1760 as quoted in the MPEP § 2106 (IV)(B)(1)(a). Conversely, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized,

**and is thus statutory.** See MPEP § 2106 (IV)(B)(1)(a). Here, independent Claim 1 recites a computer-readable medium encoded with a data structure and therefore Claim 1 is statutory and not subject to a rejection based on 35 U.S.C. § 101.

Likewise, the rejection of Claims 2-12 under 35 U.S.C. § 101 is improper at least for the reasons stated above and for depending from independent Claim 1. Independent Claim 13 has been amended to state the limitations of Claim 1 and therefore Applicants submit that the rejection of Claim 13 under 35 U.S.C. § 101 is now moot. Consequently, the rejection of Claims 14-17 is now improper.

Referring jointly to Claims 18, 29, and 40, each has been amended to include the “real world” limitation of sending the self-descriptive binary data structure to a target. Support for this amendment may be found in the specification with reference to Figure 6. Specifically, paragraph 0051 states “...configured, in one embodiment, to send data from the source 602 to the target 604.” Applicants submit that Claims 18, 29, and 40, as amended, are in accordance with 35 U.S.C. §101. Likewise, the claims that depend from Claims 18, 29, and 40 are in condition for allowance.

Regarding Claim 27, the Office Action states that executing a bootstrap does not produce a “useful, tangible and concrete result.” Applicants respectfully disagree. One skilled in the art will recognize that a bootstrap executable produces a very tangible and concrete result, for example, the booting of a computer (a very tangible device), or the launching of a more complex program. Here, the bootstrap executable is configured to reference the customizable directory and identify a location of a second target data set. The specification reasonably conveys that the microcode reconstruct and **boot** image (which may include the bootstrap executable) of Figure 7 produces a very tangible result,

i.e. the upgrade of the target device. As such, Claims 27 and 28 are improperly rejected under 35 U.S.C. § 101.

### Claim Rejections under 35 U.S.C. § 112

Claims 29-36 stand rejected under 35 U.S.C. § 112, as failing to comply with the written description requirement. Specifically, the Office Action states the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention. The term “computer readable storage medium” appears to be the source of this confusion. The Examiner states “...’computer readable storage medium’ is not defined, described.”

35 U.S.C. § 112, first paragraph, states in pertinent part (emphasis added), “... and exact terms as to enable **any person skilled in the art** to which it pertains...” Any person skilled in the art of computer programming, data structures, and data storage will recognize “computer readable storage medium.” In fact, the Examiner succinctly defined “computer readable storage medium” while stating “for compact prosecution, examiner assumes, and treated [sp.] ‘computer readable storage medium’ corresponds [sp.] to any physical medium for example computer disk[s], or computer hard drive and like [sp.].” *See* Office Action, page 15-16. If the Examiner can compactly define “computer readable storage medium” then one skilled in the art will likewise recognize and understand “computer readable storage medium.” The above reasoning likewise applies to the rejection of Claims 29-36 under 35 U.S.C. § 112, second paragraph.

### Claim Rejections under 35 U.S.C. § 102(e)

Claims 1-14, 16-23, 25-27, 29-36, and 38-40 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Sharon. Applicants respectfully disagree.

It is well settled that under 35 U.S.C. §102 “an invention is anticipated if . . . all the claim limitations [are] shown in a single prior art reference. Every element of the claimed invention must be literally present, arranged as in the claim. The identical invention must be shown in as complete detail as is contained in the patent claim.” *Richardson v. Suzuki Motor Co., Ltd.*, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). Applicant respectfully asserts that Sharon does not teach or suggest all of the elements of the rejected claims in view of the following remarks.

Amended Claim 1 recites, in pertinent part (emphasis added):

a plurality of data segments, **each of the plurality of data segments comprising a segment header and a data field**, the segment header descriptive of the corresponding data segment;  
a **target data set within the data field**; and  
a data structure descriptor descriptive of the data structure, the data structure descriptor configured to identify the location of the target data set within the data field.

*See* Claim 1. The Examiner correctly notes that the present invention is claiming a self-descriptive binary data structure. The **binary** data structure may be generated or converted from an “s-record.” *See* paragraph 0062, line 5. An s-record is itself in ASCII format, using ASCII and hex characters. *See* paragraph 0002. Because the claimed data structure is a true binary image, no conversion from ASCII characters is required prior to transmission. A conversion from s-records beneficially enables interfacing with older generation hardware that uses s-records and s-record images.

As claimed, the self-descriptive binary data structure includes various features not mentioned by Sharon. These features include, but are not limited to a plurality of data segments where each data segment comprises a header and a data field, and a target data set within the data field.

Sharon, conversely, teaches a data structure referred to as “iAN files.” *See* Sharon, paragraph 0021, line 6. The iAN data structure is the result of “compressing a text based file that includes a plurality of s-records of HEX records to a file format or data structure according to the present invention.” *See* Sharon, paragraph 0026, lines 2-4. It may be valuable to note here that s-records and HEX records are both ASCII data structures, not binary data structures. *See* Sharon, paragraph 0013, lines 1-2.

Sharon specifically teaches away from using binary data formats while praising the benefits of ASCII records when stating “...and can be sent across phone lines or serial ports (RS-232) **without binary protocols.**” *See* Sharon, paragraph 0013, lines 4-5. Furthermore, Sharon teaches that the invention may be used equally with other **text-based** (or ASCII) file formats. *See* Sharon, paragraph 0013, lines 9-10. Clearly Sharon is teaching away from a binary data structure

As such, Applicants submit that the rejection based on 35 U.S.C. § 102(e) has been improperly asserted. Applicants, therefore, request the removal of the rejection under 35 U.S.C. § 102(e) with respect to Claims 1-14, 16-23, 25-27, 29-36, and 38-40.

### Claims Rejection under 35 U.S.C. § 103

Claims 15, 24, 28, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharon as applied to claim 13, 18, and 29, and further in view of Brown. Applicant respectfully disagrees. The Examiner bears the initial burden of establishing a *prima facie* case of obviousness.

*See* MPEP § 2142. To establish a *prima facie* case of obviousness; there must be some suggestion or motivation to modify the reference or to combine reference teachings, there must be a reasonable expectation of success, and the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991), *from* MPEP § 2142.

Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness. The Office Action states that both Brown and Sharon specifically teach “binary data structures.” While Brown does mention converting a segmented non-binary width data structure into a binary memory structure (*See* Brown, col. 2, lines 1-2), Sharon, conversely, makes no mention of binary data. It may be useful to understand the definition of the word “binary.” The word binary by definition is something made of or based on two things or parts.<sup>1</sup> When referring to binary data structures, the term “binary” refers to the digits ‘1’ and ‘0.’ The Examiner points to Figures 2 and 3 of Sharon as an example of a binary data structure , this is incorrect. Both Figure 2 and Figure 3 illustrate numbers other than ‘1’ and ‘0’ along with illustrating letters of the alphabet, indicating this is an ASCII data structure.

The combination of Sharon and Brown, therefore, do not result in any of the claimed limitations of the present invention. Applicants submit therefore, that the rejection of Claims 13, 18, and 29 is improper and that the rejection should be removed.

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<sup>1</sup> <http://www.webster.com/dictionary/binary>

## **CONCLUSION**

As a result of the presented remarks, Applicant asserts that Claims 1-40 are patentable and in condition for prompt allowance. Should additional information be required, Examiner is respectfully asked to notify Applicants of such need. If any impediments to the prompt allowance of the claims can be resolved by a telephone conversation, the Examiner is respectfully requested to contact the undersigned.

Respectfully submitted,

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